

# SEQUENCE LISTING

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<120> METHODS FOR IDENTIFYING INHIBITORS OF CHLOROPHYLL SYNTHASE

<130> 2191US

<160> 7

<170> PatentIn version 3.2

<210> 1

<211> 387

<212> PRT

<213> Arabidopsis thaliana

<400> 1

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Thr	Ser	Val	Asp	Arg	Val	Gly	Val	Leu	Ser	Leu	Arg	Asn	Ser	Asp	Ser
			20					25					30		

Val	Glu	Phe	Thr	Arg	Arg	Arg	Ser	Gly	Phe	Ser	Thr	Leu	Ile	Tyr	Glu
		35					40					45			

Ser	Pro	Gly	Arg	Arg	Phe	Val	Val	Arg	Ala	Ala	Glu	Thr	Asp	Thr	Asp
	50					55					60				

Lys	Val	Lys	Ser	Gln	Thr	Pro	Asp	Lys	Ala	Pro	Ala	Gly	Gly	Ser	Ser
65					70				75					80	

Ile	Asn	Gln	Leu	Leu	Gly	Ile	Lys	Gly	Ala	Ser	Gln	Glu	Thr	Asn	Lys
			85					90						95	

Trp	Lys	Ile	Arg	Leu	Gln	Leu	Thr	Lys	Pro	Val	Thr	Trp	Pro	Pro	Leu
			100					105					110		

Val Trp Gly Val Val Cys Gly Ala Ala Ala Ser Gly Asn Phe His Trp  
 115 120 125

Thr Pro Glu Asp Val Ala Lys Ser Ile Leu Cys Met Met Met Ser Gly  
 130 135 140

Pro Cys Leu Thr Gly Tyr Thr Gln Thr Ile Asn Asp Trp Tyr Asp Arg  
 145 150 155 160

Asp Ile Asp Ala Ile Asn Glu Pro Tyr Arg Pro Ile Pro Ser Gly Ala  
 165 170 175

Ile Ser Glu Pro Glu Val Ile Thr Gln Val Trp Val Leu Leu Leu Gly  
 180 185 190

Gly Leu Gly Ile Ala Gly Ile Leu Asp Val Trp Ala Gly His Thr Thr  
 195 200 205

Pro Thr Val Phe Tyr Leu Ala Leu Gly Gly Ser Leu Leu Ser Tyr Ile  
 210 215 220

Tyr Ser Ala Pro Pro Leu Lys Leu Lys Gln Asn Gly Trp Val Gly Asn  
 225 230 235 240

Phe Ala Leu Gly Ala Ser Tyr Ile Ser Leu Pro Trp Trp Ala Gly Gln  
 245 250 255

Ala Leu Phe Gly Thr Leu Thr Pro Asp Val Val Val Leu Thr Leu Leu  
 260 265 270

Tyr Ser Ile Ala Gly Leu Gly Ile Ala Ile Val Asn Asp Phe Lys Ser  
 275 280 285

Val Glu Gly Asp Arg Ala Leu Gly Leu Gln Ser Leu Pro Val Ala Phe  
 290 295 300

Gly Thr Glu Thr Ala Lys Trp Ile Cys Val Gly Ala Ile Asp Ile Thr  
 305 310 315 320

Gln Leu Ser Val Ala Gly Tyr Leu Leu Ala Ser Gly Lys Pro Tyr Tyr  
 325 330 335

Ala Leu Ala Leu Val Ala Leu Ile Ile Pro Gln Ile Val Phe Gln Phe  
 340 345 350

Lys Tyr Phe Leu Lys Asp Pro Val Lys Tyr Asp Val Lys Tyr Gln Ala  
 355 360 365

Ser Ala Gln Pro Phe Leu Val Leu Gly Ile Phe Val Thr Ala Leu Ala  
 370 375 380

Ser Gln His  
 385

<210> 2  
 <211> 541  
 <212> PRT  
 <213> Orzya sativa

<400> 2

Met Thr Thr Val Ala Ser Leu Ser Leu Leu Pro His Leu Leu Ile Lys  
 1 5 10 15

Pro Ser Phe Arg Cys Cys Ser Arg Lys Gly Val Gly Arg Tyr Gly Gly  
 20 25 30

Ile Lys Val Tyr Ala Val Leu Gly Asp Asp Gly Ala Asp Tyr Ala Lys  
 35 40 45

Asn Asn Ala Trp Glu Ala Leu Phe His Val Asp Asp Pro Gly Pro Arg  
 50 55 60

Val Pro Ile Ala Lys Gly Lys Phe Leu Asp Val Asn Gln Ala Leu Glu  
 65 70 75 80

Val Val Arg Phe Asp Ile Gln Tyr Cys Asp Trp Arg Ala Arg Gln Asp  
 85 90 95

Leu Leu Thr Ile Met Val Leu His Asn Lys Val Val Glu Val Leu Asn  
 100 105 110

Pro Leu Ala Arg Glu Phe Lys Ser Ile Gly Thr Leu Arg Lys Glu Leu  
 115 120 125

Ala Glu Leu Gln Glu Glu Leu Ala Lys Ala His Asn Gln Val His Leu  
 130 135 140

Ser Glu Thr Arg Val Ser Ser Ala Leu Asp Lys Leu Ala Gln Met Glu  
 145 150 155 160

Thr Leu Val Asn Asp Arg Leu Leu Gln Asp Gly Gly Ser Ser Ala Ser  
 165 170 175

Thr Ala Glu Cys Thr Ser Leu Ala Pro Ser Thr Ser Ser Ala Ser Arg  
 180 185 190

Val Val Asn Lys Lys Pro Pro Arg Arg Ser Leu Asn Val Ser Gly Pro  
 195 200 205

Val Gln Pro Tyr Asn Pro Ser Leu Lys Asn Phe Trp Tyr Pro Val Ala  
 210 215 220

Phe Ser Ser Asp Leu Lys Asp Asp Thr Met Val Pro Ile Asp Cys Phe  
 225 230 235 240

Glu Glu Gln Trp Val Ile Phe Arg Gly Lys Asp Gly Arg Pro Gly Cys  
 245 250 255

Val Met Asn Thr Cys Ala His Arg Ala Cys Pro Leu His Leu Gly Ser  
 260 265 270

Val Asn Glu Gly Arg Ile Gln Cys Pro Tyr His Gly Trp Glu Tyr Ser  
 275 280 285

Thr Asp Gly Lys Cys Glu Lys Met Pro Ser Thr Lys Met Leu Asn Val  
 290 295 300

Arg Ile Arg Ser Leu Pro Cys Phe Glu Gln Glu Gly Met Val Trp Ile  
 305 310 315 320

Trp Pro Gly Asn Asp Pro Pro Lys Ser Thr Ile Pro Ser Leu Leu Pro  
 325 330 335

Pro Ser Gly Phe Thr Ile His Ala Glu Ile Val Met Glu Leu Pro Val  
 340 345 350

Glu His Gly Leu Leu Leu Asp Asn Leu Leu Asp Leu Ala His Ala Pro  
 355 360 365

Phe Thr His Thr Ser Thr Phe Ala Lys Gly Trp Ser Val Pro Ser Leu  
 370 375 380

Val Lys Phe Leu Thr Pro Ser Ser Gly Leu Gln Gly Tyr Trp Asp Pro  
 385 390 395 400

Tyr Pro Ile Asp Met Glu Phe Arg Pro Pro Cys Met Val Leu Ser Thr  
 405 410 415

Ile Gly Ile Ser Lys Pro Gly Lys Leu Glu Gly Lys Ser Thr Lys Gln  
 420 425 430

Cys Ser Thr His Leu His Gln Leu His Ile Cys Leu Pro Ser Ser Arg  
 435 440 445

Asn Lys Thr Arg Leu Leu Tyr Arg Met Ser Leu Asp Phe Ala Pro Trp  
 450 455 460

Ile Lys His Val Pro Phe Met His Ile Leu Trp Ser His Phe Ala Glu  
 465 470 475 480

Lys Val Leu Asn Glu Asp Leu Arg Leu Val Leu Gly Gln Gln Glu Arg  
 485 490 495

Met Ile Asn Gly Ala Asn Val Trp Asn Trp Pro Val Ser Tyr Asp Lys  
 500 505 510

Leu Gly Ile Arg Tyr Arg Leu Trp Arg Asp Ala Ile Glu Arg Gly Val  
 515 520 525

Asp Arg Leu Pro Phe Ser Asn Gln Ser Glu Ser Gly Ser  
 530 535 540

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 <211> 378  
 <212> PRT  
 <213> Avena sativa

<400> 3

Met Ala Thr Ser His Pro Leu Ala Ala Ala Ala Ala Thr Ser Ser Ser  
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Ser Ala Thr Phe Arg Pro Pro Leu Arg Phe Leu Ser Ser Pro Pro Ser  
 20 25 30

Ser Leu Thr Leu Asn Arg Arg Arg Ser Phe Pro Val Val Cys Ala Ala  
 35 40 45

Asp Ala Asp Ala Lys Glu Thr Thr Lys Lys Pro Thr Ile Pro Asp Lys  
 50 55 60

Ala Pro Ala Ala Gly Ser Ser Phe Asn Gln Leu Leu Gly Ile Lys Gly  
 65 70 75 80

Ala Lys Gln Glu Thr Asn Ile Trp Lys Ile Arg Leu Gln Leu Thr Lys  
 85 90 95

Pro Val Thr Trp Pro Pro Leu Val Trp Gly Val Leu Cys Gly Ala Ala  
 100 105 110

Ala Ser Gly Asn Phe His Trp Thr Val Glu Asp Val Thr Lys Ser Ile  
 115 120 125

Val Cys Met Leu Met Ser Gly Pro Cys Leu Thr Gly Tyr Thr Gln Thr  
 130 135 140

Ile Asn Asp Trp Tyr Asp Arg Asp Ile Asp Ala Ile Asn Glu Pro Tyr  
 145 150 155 160

Arg Pro Ile Pro Ser Gly Ala Ile Ser Glu Asn Glu Val Ile Thr Gln  
 165 170 175

Ile Trp Val Leu Leu Leu Gly Gly Leu Gly Leu Gly Ala Leu Leu Asp  
 180 185 190

Ile Trp Ala Gly His Asp Phe Pro Ile Ile Phe Tyr Leu Ala Leu Gly  
 195 200 205

Gly Ser Leu Leu Ser Tyr Ile Tyr Ser Ala Pro Pro Leu Lys Leu Lys  
 210 215 220

Gln Asn Gly Trp Ile Gly Asn Phe Ala Leu Gly Ala Ser Tyr Ile Gly  
 225 230 235 240

Leu Pro Trp Trp Ala Gly Gln Ala Leu Phe Gly Thr Leu Thr Pro Asp  
245 250 255

Ile Val Val Leu Thr Cys Leu Tyr Ser Ile Ala Gly Leu Gly Ile Ala  
260 265 270

Ile Val Asn Asp Phe Lys Ser Ile Glu Gly Asp Arg Thr Leu Gly Leu  
275 280 285

Gln Ser Leu Pro Val Ala Phe Gly Met Glu Thr Ala Lys Trp Ile Cys  
290 295 300

Val Gly Ala Ile Asp Ile Thr Gln Leu Ser Val Ala Ala Tyr Leu Leu  
305 310 315 320

Ser Thr Gly Lys Leu Tyr Tyr Ala Leu Ala Leu Leu Gly Leu Thr Ile  
325 330 335

Pro Gln Val Ile Leu Gln Phe Gln Tyr Phe Leu Lys Asp Pro Val Lys  
340 345 350

Tyr Asp Val Lys Tyr Gln Ala Ser Ala Gln Pro Phe Phe Val Phe Gly  
355 360 365

Leu Leu Val Thr Ala Leu Ala Thr Ser His  
370 375

<210> 4  
<211> 380  
<212> PRT  
<213> Artificial

<220>  
<223> Arabidopsis thaliana fusion protein

<400> 4

Met His His His His His His Ser Ser Gly Leu Val Pro Arg Gly Ser  
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Gly Met Lys Glu Thr Ala Ala Ala Lys Phe Glu Arg Gln His Met Asp  
20 25 30

Ser Pro Asp Leu Gly Thr Asp Asp Asp Asp Lys Ala Met Ala Asp Ile  
35 40 45

Gly Ser Ala Ala Glu Thr Asp Thr Asp Lys Val Lys Ser Gln Thr Pro  
 50 55 60

Asp Lys Ala Pro Ala Gly Gly Ser Ser Ile Asn Gln Leu Leu Gly Ile  
 65 70 75 80

Lys Gly Ala Ser Gln Glu Thr Asn Lys Trp Lys Ile Arg Leu Gln Leu  
 85 90 95

Thr Lys Pro Val Thr Trp Pro Pro Leu Val Trp Gly Val Val Cys Gly  
 100 105 110

Ala Ala Ala Ser Gly Asn Phe His Trp Thr Pro Glu Asp Val Ala Lys  
 115 120 125

Ser Ile Leu Cys Met Met Met Ser Gly Pro Cys Leu Thr Gly Tyr Thr  
 130 135 140

Gln Thr Ile Asn Asp Trp Tyr Asp Arg Asp Ile Asp Ala Ile Asn Glu  
 145 150 155 160

Pro Tyr Arg Pro Ile Pro Ser Gly Ala Ile Ser Glu Pro Glu Val Ile  
 165 170 175

Thr Gln Val Trp Val Leu Leu Leu Gly Gly Leu Gly Ile Ala Gly Ile  
 180 185 190

Leu Asp Val Trp Ala Gly His Thr Thr Pro Thr Val Phe Tyr Leu Ala  
 195 200 205

Leu Gly Gly Ser Leu Leu Ser Tyr Ile Tyr Ser Ala Pro Pro Leu Lys  
 210 215 220

Leu Lys Gln Asn Gly Trp Val Gly Asn Phe Ala Leu Gly Ala Ser Tyr  
 225 230 235 240

Ile Ser Leu Pro Trp Trp Ala Gly Gln Ala Leu Phe Gly Thr Leu Thr  
 245 250 255

Pro Asp Val Val Val Leu Thr Leu Leu Tyr Ser Ile Ala Gly Leu Gly  
 260 265 270



Ile Ala Ile Val Asn Asp Phe Lys Ser Val Glu Gly Asp Arg Ala Leu  
 275 280 285

Gly Leu Gln Ser Leu Pro Val Ala Phe Gly Thr Glu Thr Ala Lys Trp  
 290 295 300

Ile Cys Val Gly Ala Ile Asp Ile Thr Gln Leu Ser Val Ala Gly Tyr  
 305 310 315 320

Leu Leu Ala Ser Gly Lys Pro Tyr Tyr Ala Leu Ala Leu Val Ala Leu  
 325 330 335

Ile Ile Pro Gln Ile Val Phe Gln Phe Lys Tyr Phe Leu Lys Asp Pro  
 340 345 350

Val Lys Tyr Asp Val Lys Tyr Gln Ala Ser Ala Gln Pro Phe Leu Val  
 355 360 365

Leu Gly Ile Phe Val Thr Ala Leu Ala Ser Gln His  
 370 375 380

<210> 5  
 <211> 24  
 <212> DNA  
 <213> Artificial

<220>  
 <223> RT-PCR primer

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24

<210> 6  
 <211> 33  
 <212> DNA  
 <213> Artificial

<220>  
 <223> PCR primer 1

<400> 6  
 ccgggatccg cggcggagac tgatactgat aaa

33

<210> 7  
 <211> 33  
 <212> DNA  
 <213> Artificial

<220>

<223> PCR primer 2

<400> 7

ccgctcgagt cagtgttgcg atgctaatgc cgt

33